Bloomington Sustainability Assessment Report

September 1st, 2007

The Bloomington Commission on Sustainability

Introduction to Sustainability and the Commission:

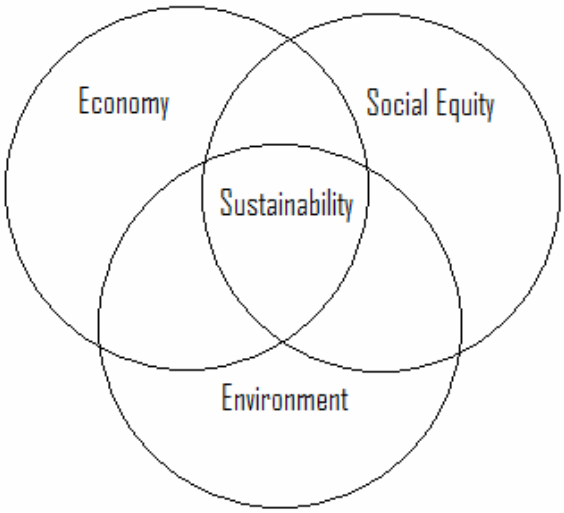
While there are many definitions of sustainability, the best definitions encompass two key elements: time and resource use. First, sustainability requires that we take into account the *future* impacts of *today's* actions. Second, sustainability requires that we not deplete our resources faster than they can be restored.

> **Sustainability** "meets the needs of the present without compromising the ability of future generations to meet their own needs."
>
> - One of the most commonly used definitions, developed by the Bruntland Commission.

> **Sustainability** is "…the efficient and restorative use of resources to make the world secure, just, prosperous, and life-sustaining."
>
> -Rocky Mountain Institute, environmental consulting firm.

Simply put, we must live within the regenerative capacity of the biosphere, remembering that our impact will be felt by our children and our children's children. But sustainability is not just about making sure we don't take too much; it's about creating a dynamic where we actually generate a *more rich* society. It's about shifting paradigms so that our society remains robust long-term. It's not just about cleaning up trash so kids can play in a litter-free environment—it's about creating a society *that doesn't even generate trash.*

Often, sustainability is visualized by the intersection of the "3 E's": environment, economy, and [social] equity. In other words, for a society to be sustainable, it must have a thriving economy, a healthy environment, and it must meet basic human needs. Any society missing or having a weakness in one or more of the 3 E's is unsustainable.



In order to address sustainability in Bloomington, the City Council and the Mayor established the Bloomington Commission on Sustainability (BCOS) in May, 2005. Because sustainability is an interdisciplinary concept, 12 Commissioners were appointed to reflect environmental, economic, and social perspectives. We are unified by a common interest in sustainability and draw on our experience in government, business, academia, local nonprofits, and perhaps most of all, as residents of Bloomington.

One of the charges of BCOS is to provide a *Sustainability Assessment Report* to the public. This report represents the first of our annual assessments. It will be used to form baseline standards for future reports. While some data were not currently available for this report, BCOS recognizes that supplemental data and indicators may be useful in future reports.

Finally, this report could not have been completed without community collaboration and the dedication of BCOS members themselves. The Indicators Committee of BCOS has been grateful for community feedback; it is only with the full participation and input from our community that we can truly have a *Sustainability Assessment Report* that is accurate, thorough, and effective. BCOS welcomes community feedback and can be reached at sustain@bloomington.in.gov.

2006 BCOS Members		2007 BCOS Members	
John West	Christine Glaser	John West	Christine Glaser
John Hamilton	George Huntington	John Hamilton	George Huntington
Daryl Neher	Cairill Mills	Jeff Mease	Cairill Mills
Catherine Stafford	Toby Strout	Catherine Stafford	Toby Strout
Susan Brackney	Robert Bent	Paul Sullivan	Robert Bent
Keith Clay	Dave Rollo	Keith Clay	Dave Rollo

Thank you goes out to Danise Alano, Jenny Sumner, and Kären Sullivan for their efforts in helping to prepare this report.

Another very special thank you goes to Michael Steinhoff for his tireless effort in making this report a reality.

Foreword

Greetings from the Bloomington Commission on Sustainability! We hope that the information presented in this report helps us understand Bloomington's current sustainability as well as areas where we are improving or need improvement. We welcome feedback on this report. We expect it to evolve substantially over the years to reflect more fully the community's experiences and expertise.

This report is based on indicators. It reflects a first round of input from a diverse set of stakeholder groups that participated in our focus group sessions and information from local experts on sustainability. Unfortunately, several suggested indicators did not make their way into this report. This is due to not to their unimportance, but rather difficulty in measuring those potential indicators, or in some cases, the need for extensive survey methods or data creation techniques beyond the means of this Commission.

Likewise many indicators only have a snapshot of information. In those cases, it is difficult to say whether something is clearly a problem or if it is clearly improving. To make the report easier to read, we've included the following symbols along with each indicator, showing whether we think a problem is getting worse, improving, or if a trend has not yet been established.

Getting Better

Not Sure

Getting Worse

As this report is refined in future iterations, we hope to find ways to include information on all of the things that help make Bloomington a city where an empowered and diverse citizenry can continually build our economic strength while maintaining the natural beauty and functional support of the environment we call home. Finally, we wish to thank all of the people that helped us gather the information we needed, and helped us understand what each means for our community. While there are countless others who shared their knowledge on indicators that were not feasible for this report, those that made this report possible include:

City of Bloomington Environmental Commission
Denise Henderson; Bloomington Public Works
Christina Fulton; Bloomington Public Works
Charles Winkle; Bloomington ITS
Joan Manning; Bloomington Police Department
Ryan Fetters; City of Bloomington Utilities
Rachel Atz; City of Bloomington Utilities
Perry Maull; IU Bus Service
Susan Brackney
Daryll Neher
Paul Schneller
Matt Kinghorn; Indiana Business Research Center
David Landers; Indiana Business Research Center
Barbara McKinney; City of Bloomington Legal
Melissa Kreigerfox; Monroe County Solid Waste Management District
Julie Ramey; Bloomington Parks and Recreation
Marcia Veldman, Bloomington Parks and Recreation
Lew May, Bloomington Transit

We believe Bloomington is a great place to live. We believe that paying close attention to indicators like these and discussing what they mean and what we want the future of Bloomington to be like, is an essential part of creating a sustainable community. Please join us in the dialog and the action.

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Indicator 1: Number of Water Bodies Unhealthy for Recreation

The Clean Water Act requires each state to maintain a list of impaired water bodies known as the 303-d list. A water body may be listed as impaired for several reasons, some of which are dangerous and others of which are not dangerous *per se* but do indicate water quality concerns. From a health and safety point of view, Monroe County has water bodies that do not meet acceptable standards for fishing or swimming. Table 1 lists those water bodies under fish consumption advisory. Advisory levels indicate the number of times that fish from these water bodies can be eaten without consuming unsafe levels of the contaminant. A level 1 advisory has no risk associated with it. Fish from Level 2 water bodies should be consumed no more than once per week; from Level 3 water bodies not more than once per month; from Level 4, no more than once every two months; and fish from Level 5 should never be eaten. Additionally those people with special health needs should take extra caution, such as pregnant women who should not consume fish with any level of mercury contamination.

Table 1.

Body of Water	Contaminant	Advisory Level
Beanblossom Creek	PCBs	3
Clear Creek	PCBs	5
Richland Creek	PCBs	3
Salt Creek	PCBs, Mercury	3,4, and 5
Stouts Creek	PCBs, Mercury	3
Griffy Lake	Mercury	3
Lake Lemon	PCBs, Mercury	3

Compiled from the Indiana 303d list from IDEM

Lake Monroe is listed for both “taste and odor” and “algae.” These conditions do not make swimming in Lake Monroe dangerous but do indicate that excess nutrients or other pollutants are degrading the quality of our primary source of drinking water.

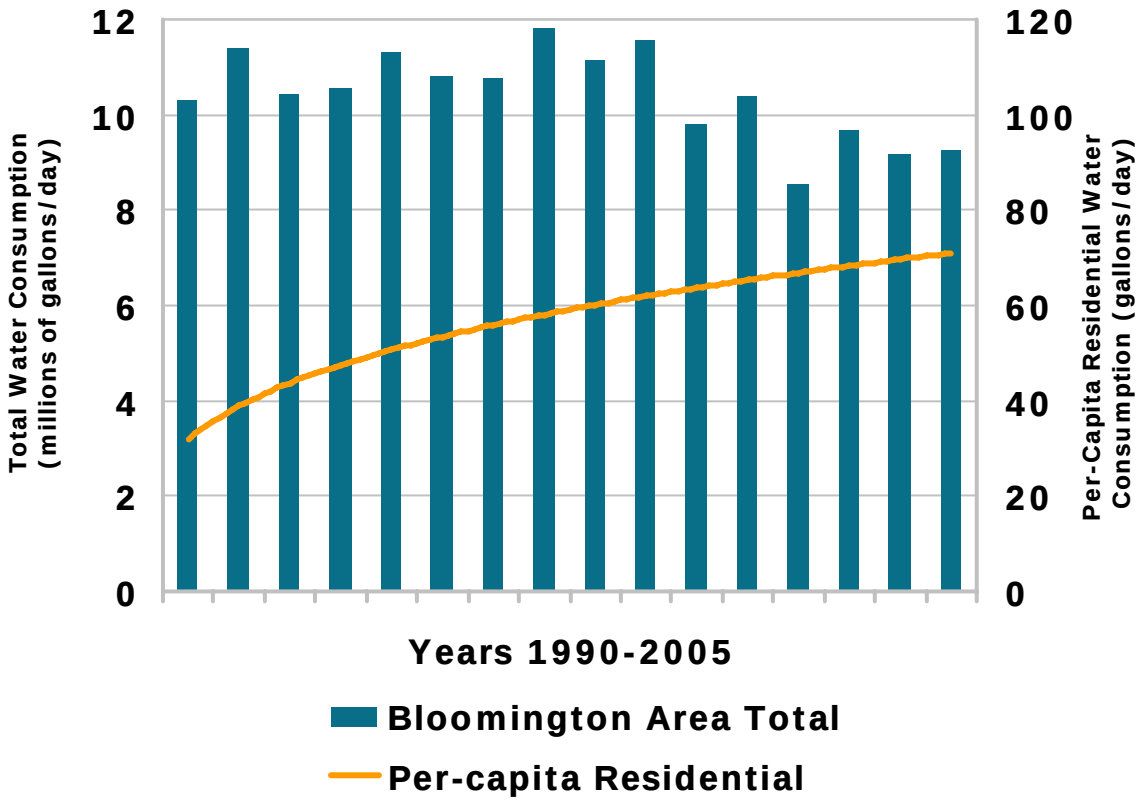
There are also water bodies that are not safe for human contact due to contamination by *E. coli* bacteria. The presence of *E. coli* indicates the presence of untreated wastewater, possibly from failing septic tanks or from the discharge from combined sewer overflows. Currently portions of Beanblossom, Honey, Indian, and Jacks Defeat Creeks fail standards for *E. coli*.

This indicator only lists pollutants that are of known concern to human health. It should be noted that the health of the streams themselves is at risk from a variety of other pollutants associated with urban runoff, such as excess sediment, nutrients, and petrochemicals from our roadways.

Indicator 2: Water Usage Per Capita Per Day

Water consumption in Bloomington has been tracked by the Bloomington Environmental Commission for several years. By looking at the details, the Environmental Commission has uncovered some interesting trends. The City of Bloomington as a whole has been decreasing its water use over time from around 12 million gallons per day in the late 1990s to about 9 million gallons per day in 2005[1]. While that trend seems very good, the reduction in use can be attributed to the loss of large commercial and industrial users. In terms of personal water usage, the trends point to increasingly unsustainable water usage. From 1990 to 2005 per capita residential water consumption has increased from 39 gallons per day to nearly 75 gallons per day.

Figure 1.



www.bloomington.in.gov/beqi/waterconsumption.htm

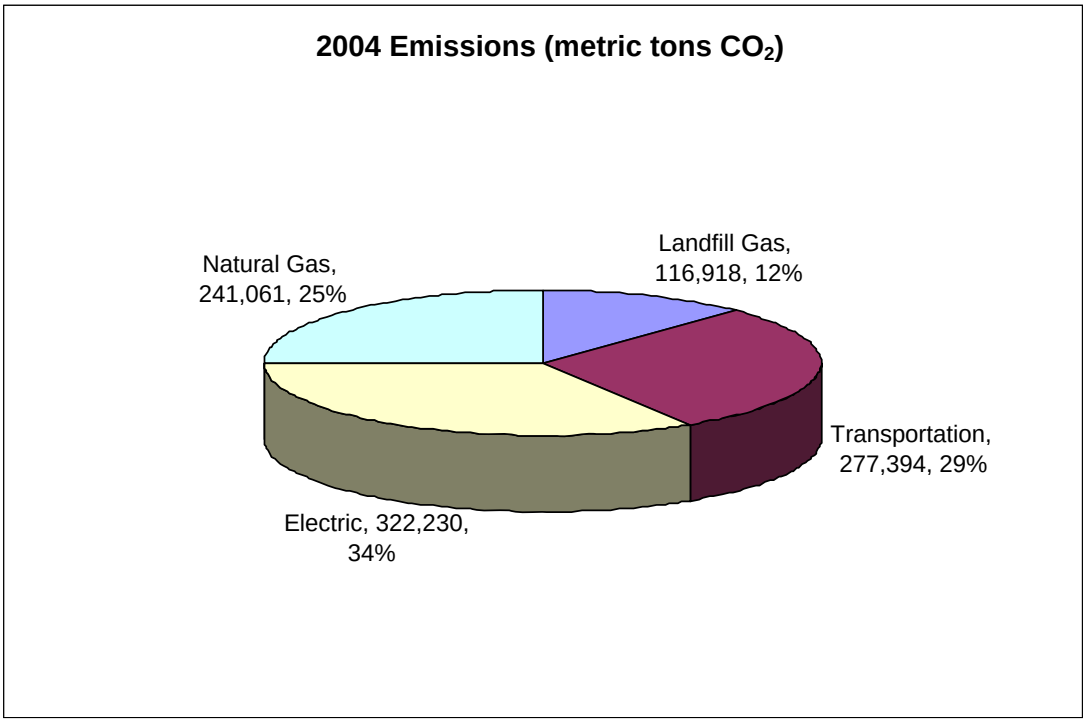
Responsible water use is important no matter where we live on the planet. Here in Bloomington we are fortunate that we live in an area where fresh water from Lake Monroe is relatively plentiful, but that does not mean that we can afford to be wasteful with it. As residential use takes up a greater portion of Bloomington's overall consumption, other users such as new businesses and industries may find the water they need harder to come by.

Maintaining a safe water supply by treating water as it enters and leaves Bloomington's water system is very expensive and energy intensive. Continually increasing demands on that system will result in higher cost for us all regardless of our ability to pay for it and will result in greater energy dependence. There are many things we can do to conserve water. Outdoor use can be curtailed by using native landscaping plants that thrive on the amount of water we receive from rainfall naturally. Or you can set up a rainwater harvesting system to collect the water that is usually lost as runoff for watering plants and gardens. Indoors you can install low flow fixtures, and place aerators on all faucets. To learn more about Bloomington's water resources and to find more ways to decrease your consumption, visit the Environmental Commission's Bloomington Environmental Quality Indicators Report online at www.bloomington.in.gov/beqi.

Indicator 3: Bloomington's Greenhouse Gas Emissions

In 2004 Bloomington was responsible for the release of approximately 957,602 metric tons of carbon dioxide.[2] This was a growth of 193,014 metric tons above the amount emitted in 1990. The average annual growth over that period was 13,787 metric tons of carbon dioxide per year. Figure 2. shows the contribution of each sector to the total in 2004.

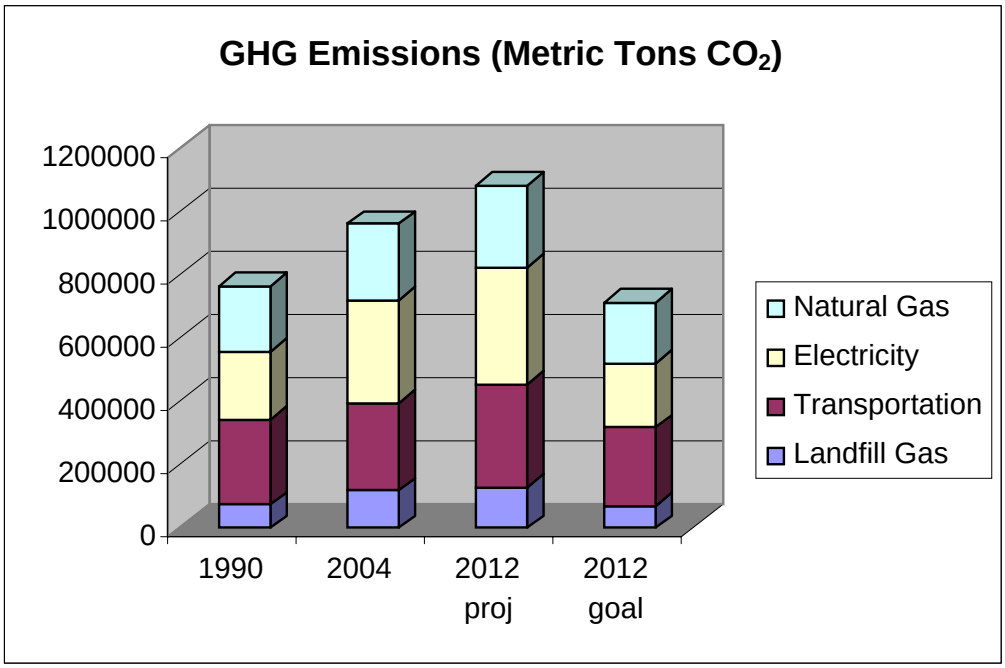
Figure 2.



The Kyoto Protocol treaty, which every industrialized nation except the United States and Australia has joined, calls for developed nations to reduce emissions to 7% below 1990 levels by the year 2012. In order to meet that goal, Bloomington will need both to stop the growth in emissions and cut an additional 246,535 metric tons of annual emissions. Figure 3 demonstrates this challenge graphically.

Reducing our contribution to global warming is critical to sustainability both here and for the entire world. For example, more precipitation is projected in the Midwest, but that precipitation is likely to occur in fewer larger rain events. More of this water will be lost as runoff and more will evaporate due to higher temperatures. This will lead to less water available for household use, recreation, and agriculture. Agricultural yields are predicted to increase in parts of the Midwest due to longer growing seasons; however, southern Indiana is expected to have decreased yields.[3]

Figure 3.



The main driver of global warming emissions comes down to one thing: energy use, since the vast majority of the energy we use in this country comes from fossil fuels. There are countless ways to save energy. Simple things are to combine errands into single car trips, take the bus or ride a bike if possible, and adjust your thermostat up or down to save energy depending on the season. Many of these things will also save you money. One easy way to cut energy use is by using compact fluorescent light bulbs. The City of Bloomington with the support of the Bloomington Environmental Commission and the Commission on Sustainability has recently launched a Change a Light campaign to make it even easier and cheaper to make the switch to compact fluorescent bulbs. The new bulbs can be purchased at a reduced rate at local Bloomington retailers or by contacting the Commission on Sustainability directly.

Indicator 4: Local Food

Local food relates to each of the three E's of sustainability. Locally produced and consumed food benefits Bloomington's economy by keeping money locally. The environment is served by reduced fossil fuel consumption in transportation and through environmentally sound farm practices that are employed when food is produced organically. In addition, locally grown food is used to feed people who are unable to afford the cost of fresh produce at conventional stores through campaigns such as the Plant a Row for the Hungry. Local food production is also, at present, a somewhat elusive topic. The informal nature of the subject makes it difficult to quantify the amount produced, what was produced, and who consumed it. While we have found some information, we will need the help of the community to truly know what's happening for future reports.

One of the best places to look for local food is at the Bloomington Community Farmers' Market, which is held every Saturday morning from April through November in the parking lot of City Hall. While there are no measurements of how much food is sold there, we do know a few things. In 2005 there were 141 different vendors who participated in the market at some point during the season. Of those, 10 were from within Bloomington and 22 were from Monroe County. The remainder came from 23 different counties in Indiana. Much of the food sold at the Farmers' Market could be most accurately described as "regionally grown."

No recent studies on the Bloomington Farmers' Market are available to determine the amount of food being sold there in terms of weight or monetary value. It is possible to estimate the monetary value based on figures from similar markets. In 2005 the total estimated attendance for the market was 108,000. The average amount spent at other markets is $16 per person on non-craft items. If we assume that only half of the attendees make purchases, total sales would approximate $864,000 per year.[4]

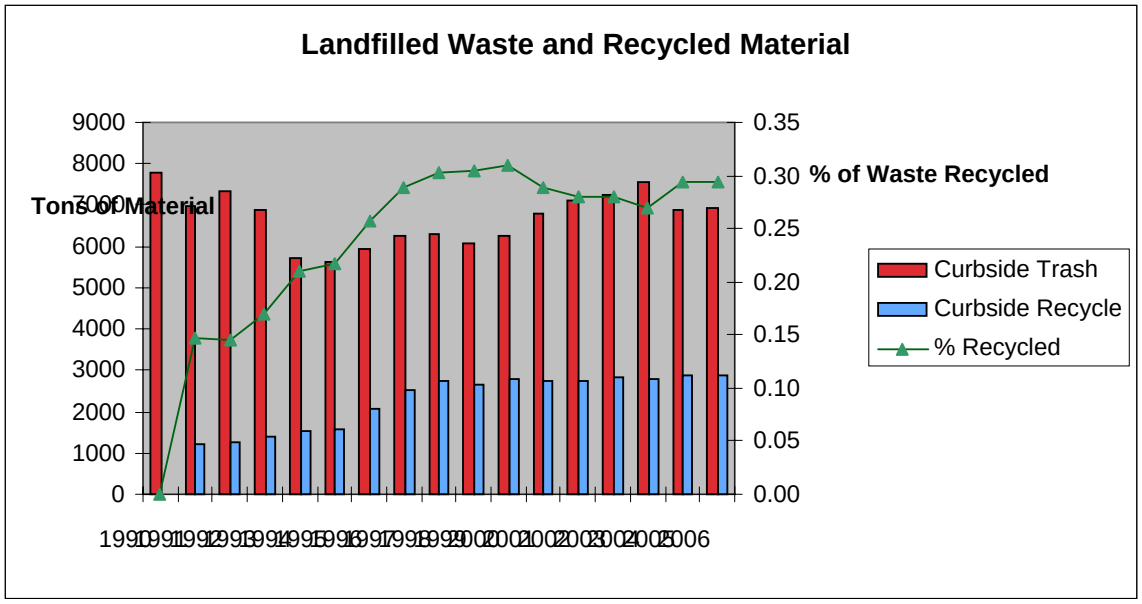
In addition to the local food sold at the Farmers' Market, Bloomington was very generous during the 2005 Plant-a-Row for the Hungry food drive, donating 4,997 pounds of locally grown produce. This food helped to provide a more nutritious diet to area families that may not have been able to afford it otherwise.

Indicator 5: Waste Reduction and Recycling

The City of Bloomington has one of the most successful recycling programs in the state. The program has received the Governor's Excellence in Recycling award in 1998 and Governor's Excellence Honorable Mention in 2000.

Recycling benefits sustainability by saving energy on the manufacture of new products using recycled materials rather than extracting and processing raw materials. Recycling saves land and air resources by decreasing the need to dedicate more land to the disposal of garbage and decreasing the amount of trash that is incinerated. Participation in recycling had its biggest growth in the years following the beginning of the Pay-As-You-Throw program for garbage collection in 1993. The total amount of waste recycled has since leveled off in the late 1990s and early 2000s, while the amount of waste sent to the landfill continued to grow. This caused the overall recycling rate to fall over that period.

Figure 4.



Over 2005 and 2006, both the amount of waste sent to landfills and the amount recycled has stayed fairly constant. Interestingly there was no significant increase in the amount of material recycled in 2005 that would balance the drop in the amount of curbside trash in that year when the price of trash stickers increased to $2.

Indicator 6: Percentage of impervious versus pervious surfaces

Pervious surfaces are among our most important protections for water quality because they allow rainwater to infiltrate slowly into the ground. As the water trickles down, it is filtered by the soil and plant roots, removing excess nutrients and pollution. Once underground, the water replenishes the groundwater that some people use for their drinking. Groundwater also slowly seeps out into rivers and streams to keep them running during dry periods.

Impervious surfaces such as roads, parking lots and buildings are designed to shed the rainwater, channel it, and move it away from buildings as quickly as possible. This fast-moving runoff water collects petroleum products and other trash from our streets and deposits them directly into our surface waters. Studies have consistently shown that increasing impervious cover is linked to stream bed erosion, loss of habitat quality, and increasing pollution loads in the receiving lakes and reservoirs.[5]

Within the Bloomington Planning Jurisdiction, there are approximately 5.61 square miles of impervious surfaces. Of that, 1.74 square miles are roads, 1.84 square miles of parking lots, and 2.03 square miles of roof tops. These numbers underestimate the impervious total however, because they only reflect what is recorded by the City of Bloomington Engineering Department, and do not include things like driveways and paved walking paths such as those on the Indiana University campus.

Table 2.

Surface Type	Area (sq mi)	% of Total Area
Total Pervious	**20.49**	**78.51**
Total Impervious	**5.61**	**21.49**
Roads	1.74	7.42
Parking Lots	1.84	7.85
Buildings	2.03	8.66

Land surfaces in Bloomington are at least 21.49% impervious. According to the Center for Watershed Protection, when watersheds approach 25% imperviousness, they become "non-supporting" of aquatic life.[5] The information above is the amount of imperviousness of Bloomington as a whole. Individual watersheds, or the area that drains into a single stream, may

be more or less impervious than what is reported for the entire city. Further study could refine the measures of imperviousness of individual stream watersheds. That could then be used as a predictor of individual streams.

As we continue to build more roads, buildings, and parking lots, we need to consider other ways of constructing them to reduce the amount of stormwater runoff. New pervious pavements and green roofs can be included in new building projects to absorb runoff. Many existing structures can be retrofitted with rainwater harvesting systems to utilize the runoff directly for watering gardens and landscaping. Also, more passive techniques such as bio-swales and rain gardens can take runoff from parking lots and roofs, and allow it infiltrate.

Indicator 7: Number of people without health insurance

Maintaining a healthy population sustains a community in a number of ways. Healthy communities are more productive and put less strain on public health resources. When individuals do not have access to health insurance, they typically put off seeking less costly preventative care and go to a health professional only in an urgent situation. An insured population is also financially stable. Oftentimes for the uninsured, a medical emergency can trigger a number of other events such as a job loss and can push a family into poverty.

Here in Bloomington we have approximately 13,000 uninsured individuals, as indicated in Table 3. Unfortunately, exact numbers on this indicator are impossible to obtain. The most reliable data on persons in Monroe County without health insurance is provided by the U.S. Census Bureau for the year 2000. These data are available from the census through an experimental process known as the Small Area Health Insurance Estimates (SAHIE) program which was created to develop model-based estimates of health insurance coverage by age for counties and states. The SAHIE program models county-level health insurance coverage by combining survey data with population estimates and administrative records. The estimates are based on data from demographic estimates, aggregated community tax returns, food stamp and Medicaid participation records, and other factors.

Table 3.

Age Group	Number Insured	Number Uninsured	Percent Uninsured
All Ages	94,811	13,081	12.1
Under Age 18	18,528	1,871	9.2

Thankfully in Bloomington we have another resource for people lacking health insurance. In the spring of 2007, the former Community Health Access Program and Clinic was converted to Volunteers in Medicine of Monroe County. The new program will offer more primary and preventative care services for residents of Monroe and Owen Counties who do not have health insurance and are within 200% of the federal poverty level. To learn more about Volunteers in Medicine and how you can help them with their mission, visit them on the web at: http://www.vimmonroecounty.org/.

Indicator 8: Job Growth and Diversity of Industry Sectors

Maintaining a diverse employment base will help keep the local economy robust and able to adapt to changing business conditions. Table 4 shows the latest information available on employment changes in Monroe County as reported by the US Bureau of Economic Analysis.

Table 4.

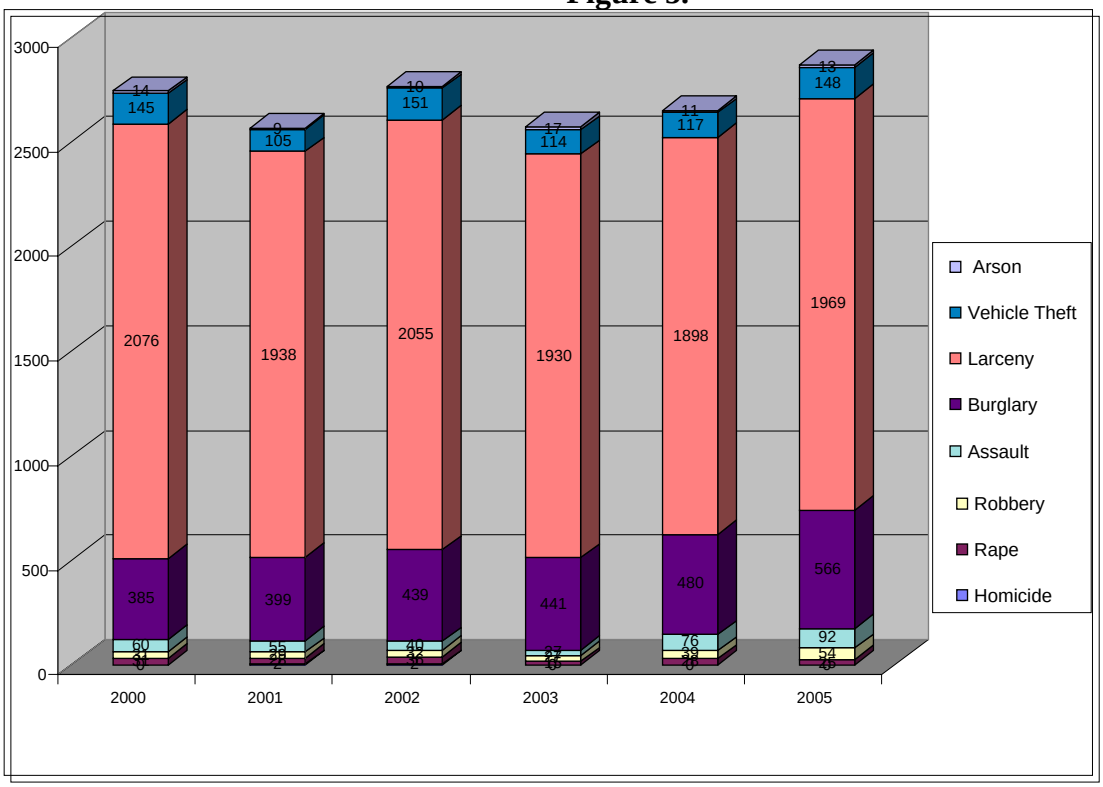
Economic Sector	Employment by Sector, 2004	% of Total	Average Earnings per Job, 2004	% Change in employment from 2001
Total	**82,454**	**100.0%**	**$32,790**	**5.8%**
Government and government enterprises	21,215	25.7%	$38,270	8.0%
Retail Trade	8,874	10.8%	$20,362	0.3%
Health care and social assistance	8,538	10.4%	$41,823	9.2%
Manufacturing	7,917	9.6%	$50,464	-2.5%
Accommodation and food services	6,956	8.4%	$13,487	6.4%
Other services, except public administration	4,457	5.4%	$19,479	2.7%
Construction	4,192	5.1%	$39,192	7.6%
Administrative and waste services	3,904	4.7%	$19,424	14.2%
Professional and technical services	3,493	4.2%	$33,425	1.3%
Real estate and rental and leasing	2,814	3.4%	$20,559	15.9%
Wholesale trade	1,953	2.4%	$46,443	3.4%
Finance and insurance	1,800	2.2%	$36,168	10.9%
Information	1,395	1.7%	$50,727	-4.5%
Arts, entertainment, and recreation	1,362	1.7%	$8,764	11.7%
Educational services	1,181	1.4%	$12,750	42.5%
Transportation and warehousing	1,069	1.3%	$32,611	11.2%
Farm employment	501	0.6%	$6,519	-6.4%
Utilities	293	0.4%	$96,102	2.1%
Management of companies and enterprises	226	0.3%	$127,133	-11.0%
Mining	215	0.3%	$39,907	-19.2%
Forestry, fishing, related activities	99	0.1%	$19,242	-22.0%

Longer term trends reported by the Bureau of Labor Statistics show that from 1995 to 2005, there has been a net gain of 6,194 jobs, with manufacturing declining being replaced by mainly health care and other service jobs. As the make up of our local economy evolves and we seek to increase jobs it will be important to keep watch on whether the new forms of employment are providing livable wages and adequate health benefits. This would be a more accurate depiction of the sustainability of our local economy which we hope to dig deeper into in the future.

Indicator 9: Crime Rate

Since the year 2000, the crime rate in Bloomington has been fairly constant with no clear trends. One thing that does stand out is the relative number of property crimes to violent crimes. Property crimes such as burglary, larceny, vehicle theft, and arson vastly outnumber the violent crimes of assault, robbery, rape, and homicide in Bloomington. While property crimes are certainly not good, they do not have the same impact as violent crime on the community.

Figure 5.



As a percentage of total crime, violent crime was nearly 6% in 2005 as compared to just above 4% in 2000. However, that percentage dropped between 2000 and 2003. At this point we cannot draw any conclusions about crime trends. Increasing numbers could just as easily be a result of better policing and more reporting of crimes.

Continuing to monitor the Bloomington crime rate will be important for identifying trends. We would like to know how crime is distributed across the city. We do know from studies that low-income and minority groups are more likely to be victims of crime than other groups[6]. These victimized citizens are also the least able to deal with the effects of losing their possessions or a loved one. Meeting the human needs of all people is a prerequisite for a sustainable city.[7] In order to become a truly sustainable city, all of our residents must enjoy the same level of protection against crime.

Indicator 10: Number of Students Passing ISTEP

High educational attainment is linked with all the aspects of sustainability. Our local economy depends on a knowledgeable workforce capable of providing the skills desired by employers. Educational attainment level has been closely linked with economic self-sufficiency in many studies.[8] The environment benefits from a well-educated community. A review of studies finds that education level is one of the few variables consistently linked with environmental concern.[9]

The Indiana Statewide Testing for Educational Progress test (ISTEP) is the test administered to Indiana students in grades 3-10 to gauge performance as mandated by the No Child Left Behind Act of 2001. Scores for schools in the Monroe County Community School Corporation consistently exceed the state averages with 75.9% compared to 71.4% passing the English/Language Arts section and 77.4% compared to 73.7% passing the Mathematics section.[10]

While MCCSC Schools as a whole are above average with regard to the rest of Indiana, individual student performance on the ISTEP has been correlated to ethnic group, income level, and gender. For more information about how individual school districts performed visit www.mccsc.edu.

Figure 6 correlates students' passing the ISTEP with their stated race. Asian and Pacific Islanders consistently have higher passing percentages than other groups. African-Americans most often have the lowest passing percentage, but in some cases Multi-Cultural and Hispanic students have the lowest level of performance. However, race is a complex issue to analyze and the causes for these results can be many and varied.

Disparities are also evident when comparing income groups, as measured by the student's enrollment in free or reduced cost lunch programs. Figure 7 demonstrates the differences between the two groups. When we compare by gender as in Figure 8, the differences are even less evident and males and females perform at relatively equal levels. It should be noted, however, that females tend to outperform males in many instances.

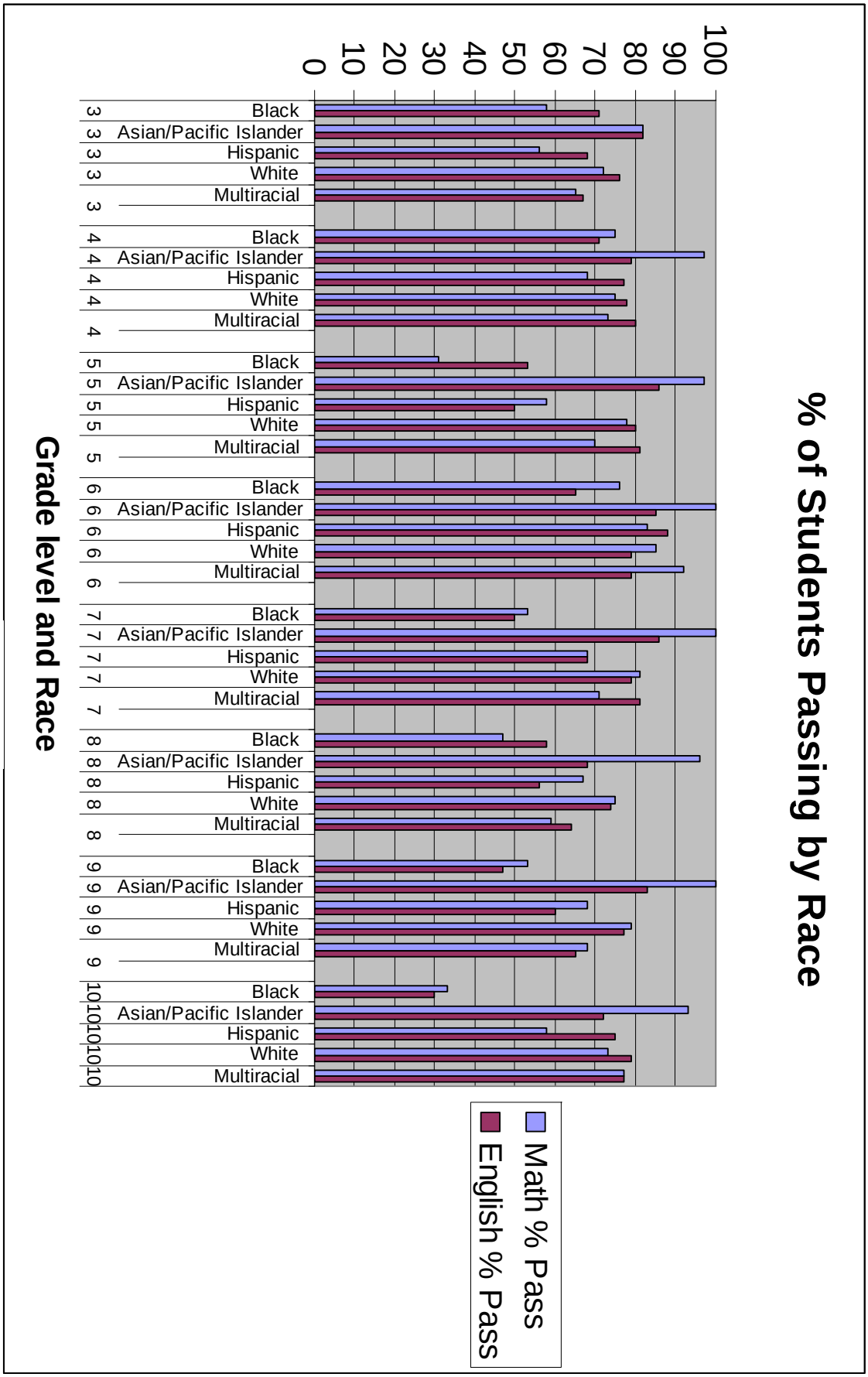

% of Students Passing by Race
Grade level and Race
0
10
20
30
40
50
60
70
80
90
100
Black
Asian/Pacific Islander
Hispanic
White
Multiracial
3
4
5
6
7
8
9
10
Math % Pass
English % Pass

Figure 9.

Figure 7.

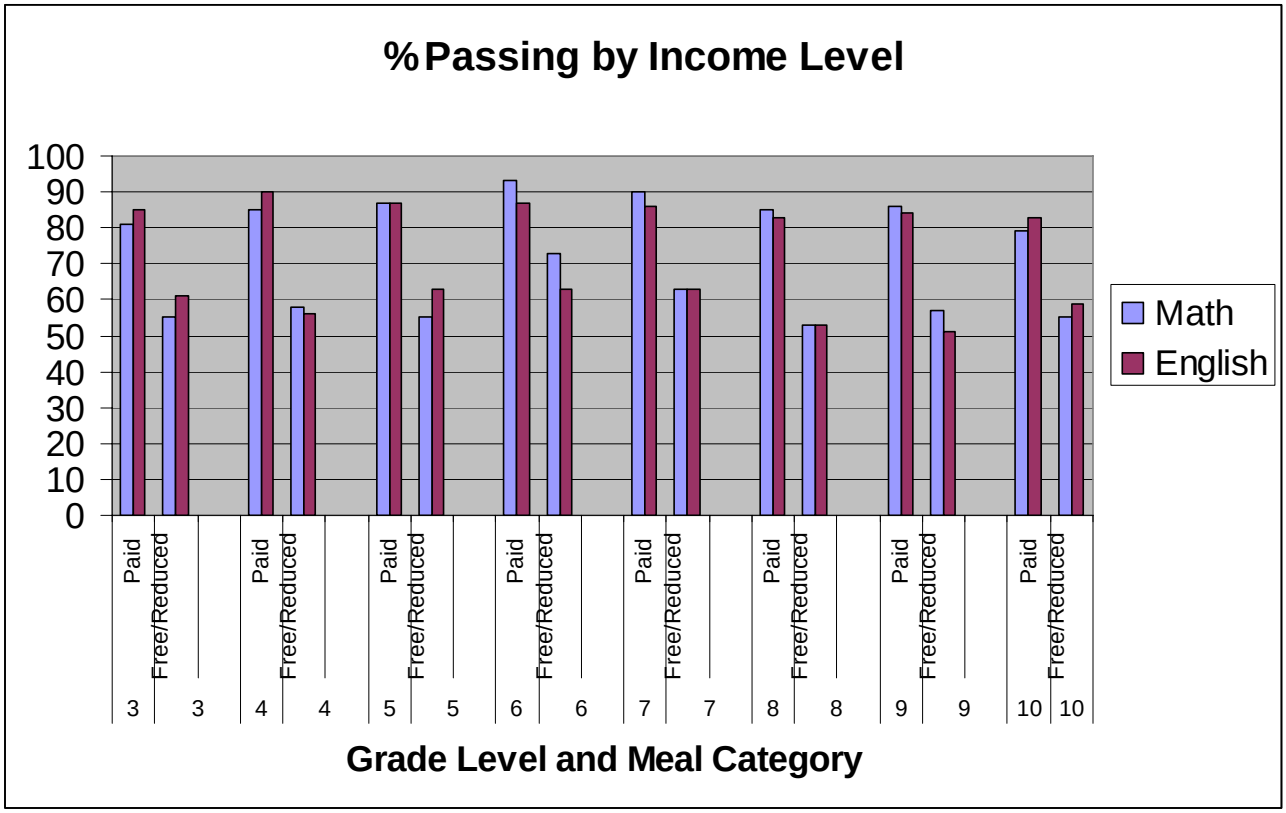
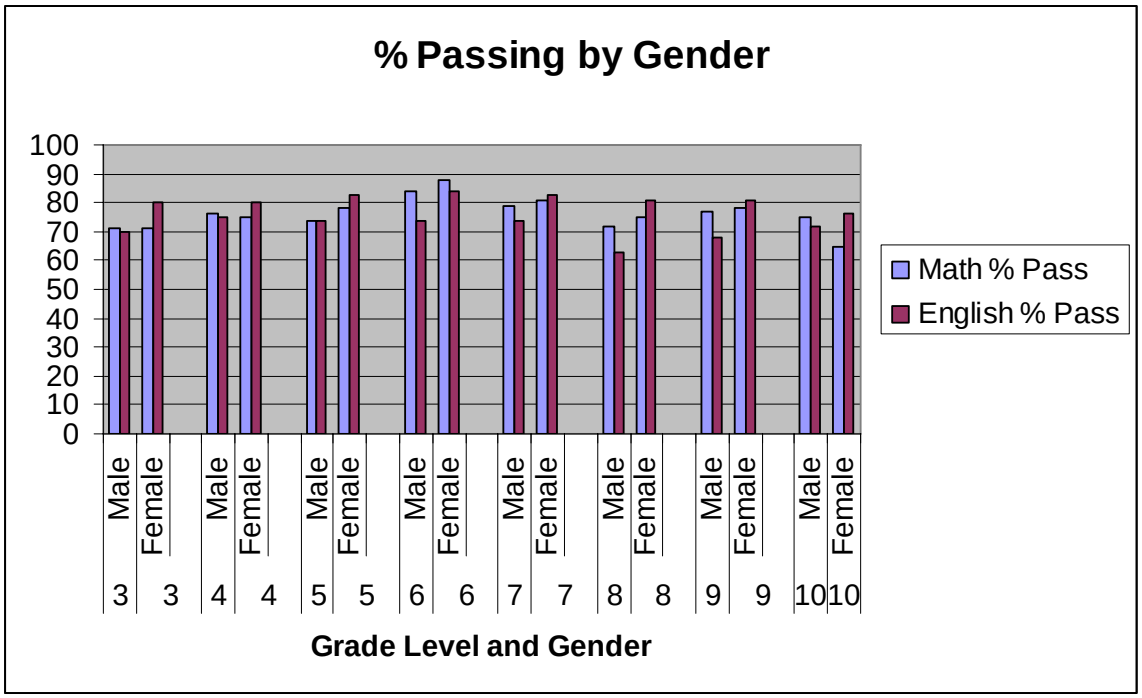


Figure 8.

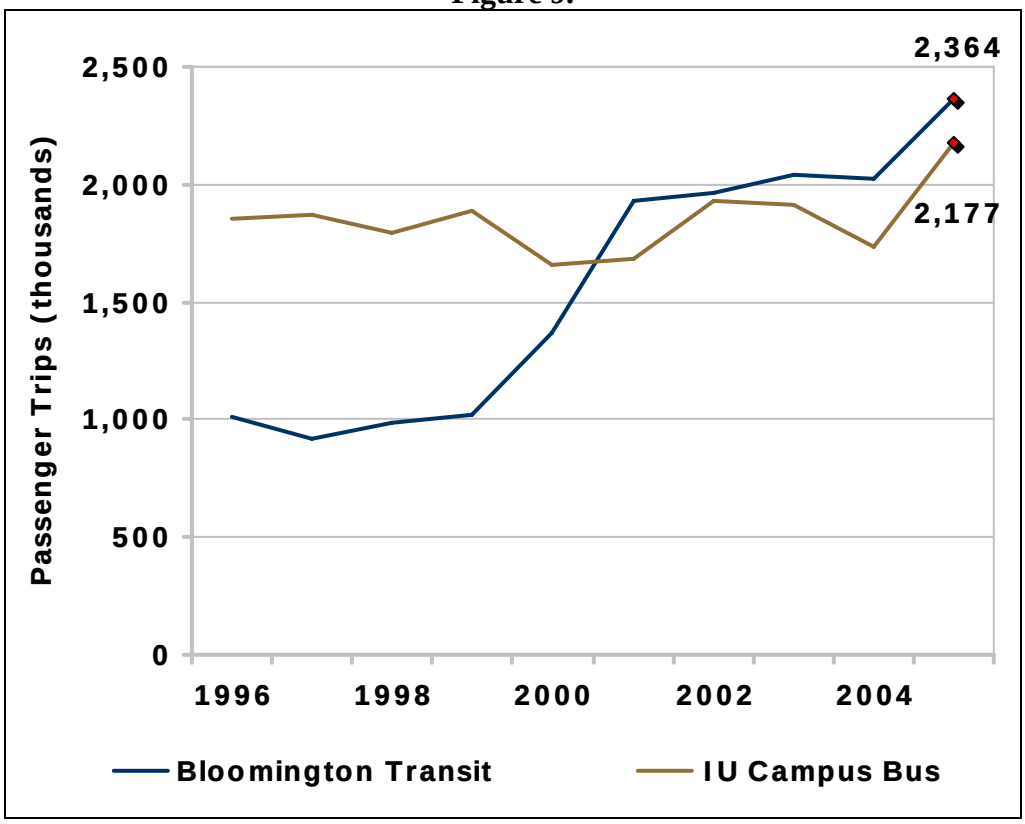


Indicator 11: Ridership rates on Bloomington Transit and IU buses

Ridership trends in public transportation use in Bloomington are on the way up. In 2006, Bloomington Transit reported having a record year for ridership with over 3.6 million passengers carried.

There are many reasons for increases on both Bloomington Transit and IU buses. Higher gasoline prices in 2006 and transit fees assessed on all IU students which allow them to ride on both bus systems likely account for some of the increase. Additionally Bloomington Transit has been promoting their service by offering free rides on the first Friday of each month to encourage ridership.

Figure 9.



The benefits of public transportation are many. Using public transportation reduces traffic congestion and hence demand for roadway expansion and parking, both of which have drawbacks related to impervious surfaces and local government expenses. Nationwide, public transportation saves 1.4 billion gallons of gasoline each year.[10] That translates to significant reductions in greenhouse gasses and other fossil fuel pollution. Public transportation also saves money. A two-adult household that uses public transportation saves an average of $6,251 per year.[11] Recognizing the benefits of public transportation, arrangements that allow Indiana University students and City employees have been made to promote greater use of public transportation. Bloomington buses are also better than most others cities'. All of Bloomington

Transit's buses run on 20% bio-diesel which has fewer emissions than regular diesel. Also we have two new hybrid-electric buses which have even fewer emissions and are much quieter than their conventional counterparts.

Indicator 12: Increase in City-Maintained Trails

Connectivity of a city can add significantly to the livability of a community. Trails and greenways help people get around town without the use of fossil fuels. They improve the health of the community as well. In the past roadways were often designed without regard to forms of transportation other than automobiles. Having trails and greenways in place is a prerequisite for people to adopt more sustainable forms of transportation. A recent study of Atlanta, Georgia found that neighborhoods that were more walkable had residents who spent on average $640 less on transportation, produced less air pollution, and were more than twice as likely to receive the level of physical activity required to maintain good health.[12] All of these factors are related to sustainability. Money not spent on gas and other maintenance can be used to improve the local economy, or help a family invest in their future. Improved health from increased physical activity and fewer air pollutants will reduce the strain on the public health system. Trail networks also improve the social interactions among residents who get the chance to stop and interact with each other in a way that they otherwise would not be able to.[13]

As of 2006, Bloomington has 12.76 miles of multi-use trails and sidepaths maintained either by the Public Works or Parks and Recreation Departments. This does not include the 2.4-mile Clear Creek Bike Trail which is located outside of Bloomington City limits. We will continue to monitor this number to determine if we are improving in this area. The next few years should see major additions with the development of the Jackson Creek Trail on the south east side of town and the new B-Line Greenway, along the former CSX rail.

Artist's rendering of the B-Line Trail going through downtown.

Future consideration should be given to ensuring that multi-use trails and sidepaths are extended to all parts of town equitably.

In addition to mileage of multi-use trails for transportation, there are over 35 miles of trails in our City Parks that provide opportunity for exercise and passive outdoor recreation. A list of these trails is found in Table 6. Additionally, the Indiana University Research and Teaching Preserve has a number trails that can be accessed just north of Lake Griffy on Headly Road.

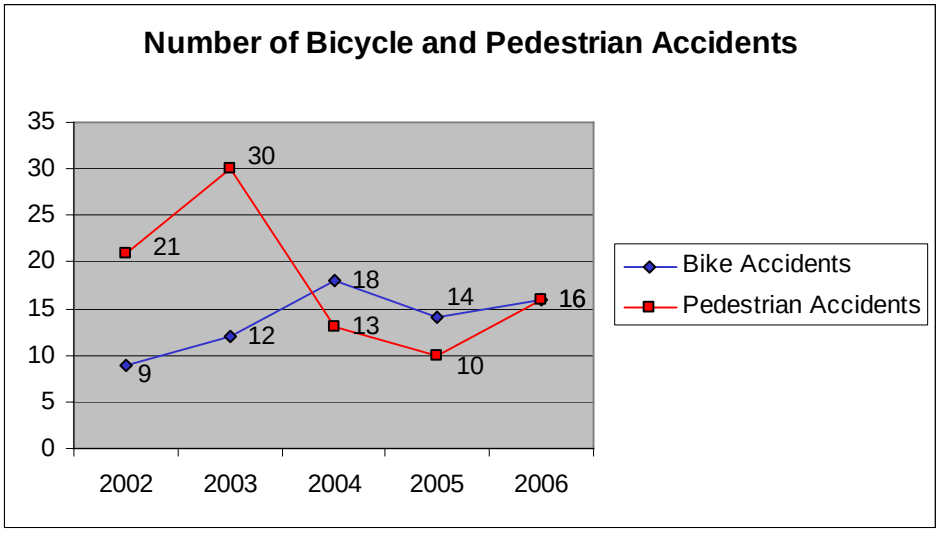
Table 6.

Park Name	Trail Name	Length (miles)	Type
Griffy	Nature Trail	0.4	loop
	Hiking Trail	1.6	loop
	Griffy Creek Trail	1.5	non-loop
	South Shore Trails	3.7	loop
	Lanam Trail	1.1	non-loop
	Wetland Trail	0.5	non-loop
	North Shore Trail	1.5	non-loop
	North Shore Spur	1.0	loop
	Griffy Total	10.4	
Victor Oolitic	Victor Oolitic	2.0	non-loop
Bryan Park	Fitness Trail Loop	0.8	loop
	Streamside Trail	0.2	non-loop
Building Trades	Loop Trail	0.3	loop
Cascades Golf Course	Golf Paths	6.2	loop
Clear Creek Trail	Clear Creek Trail	2.4	non-loop
Latimer Woods	Nature Trail	Incomplete	loop
Leonard Springs	Leonard Springs Trail	1.1	loop
	Ridgetop Road	0.3	non-loop
Miller Showers	Clean Water Path	0.6	loop
Ninth Street	9th St. Loop Trail	0.4	Loop
Olcott Park	Fitness Trail	0.5	loop
Park Ridge West	Bike Trail	0.6	non-loop
Sherwood Oaks Park	Jackson Crk. Parks	0.3	non-loop
Southeast	Path	0.1	non-loop
Thomson	Early History Trail	0.7	loop
	Thomson Woods Trail	0.7	loop
Twin Lakes	Jogging Path	0.6	loop
	Wooded paths	0.5	non-looping
Wapehani	Bike Trails	5.0	loop
Winslow Sports Park	Fitness Trails	1.2	loop
Winslow Woods Park	Nature Trail	0.7	loop
	Total	**35.87**	

Indicator 13: Number of pedestrian, bike accidents per capita

The availability of alternative modes of transportation is crucial to achieving sustainability. The costs of private automobile transportation are high and diverse. These include the land consumed to use and store automobiles (see Indicator 6), and the greenhouse gas emissions they create (see Indicator 3). Many "improvements" made to streets for the benefit of moving traffic quickly, come at the expense of those who choose modes of travel that are less burdensome on their community's resources.

Figure 10.



An often-cited impediment to the adoption of lighter forms of transportation is safety. Road widening encourages faster traffic and will take away potential buffers between people and cars. That makes streets feel less safe and certainly less pleasurable to walk. Many people would like to use bicycling for transportation but do not feel safe riding on the roadways, where they belong. We cannot make all roadway decisions based upon the idea of moving more cars faster while simultaneously exhorting people to adopt more sustainable modes of transportation.

Interpretation of the number of bike and pedestrian accidents in Bloomington is complicated because we do not know whether an increase in the number of accidents indicates that more people are choosing these modes of transportation or that it is

becoming more dangerous to do so. It is important that we find out what the real cause of the accidents are. More education for cyclists could be needed on how to avoid dangerous situations, like not riding on the sidewalk**.** Traffic calming strategies may be needed in areas where modes of transportation often conflict.

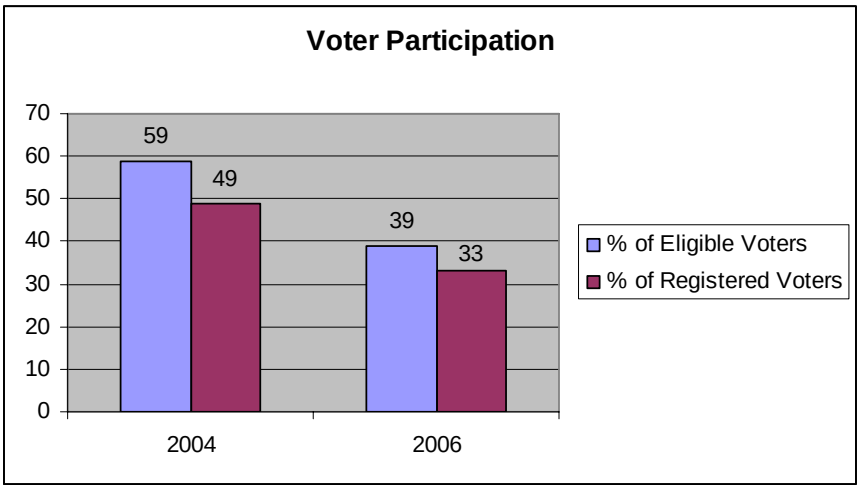
Indicator 14: Voting rates among registered and eligible voters

The United States views itself as being the preeminent democracy in the world. Ironically, the United States has the lowest participation rate of any mature democracy in the world.[14]

Reasons for this lack of participation are varied and include general disillusionment with politics and the idea that one's vote doesn't really count. This sense of a lack of empowerment is not compatible with sustainability. Because voter participation rates rise with income and education levels[15], those who feel less empowered to determine the outcome of their own lives are probably less likely to feel that their opinions count in political outcomes. Perhaps as we move towards a more sustainable society that allows marginalized people to become more self-sufficient, we will see an increase in participation from those groups and begin to address some of the apathy among the American electorate.

Many in Bloomington and Monroe County think of ourselves as being more politically active than most communities; unfortunately, we are unable to verify that idea. Figure 11 shows the voter participation rates as a percentage of both registered voters and those eligible to vote in the 2004 and 2006 elections.

Figure 11.



Our participation rate for the percentage of registered voters is certainly skewed low. As with any college town, our transient population has many people coming to town as students, registering to vote, and then leaving without canceling their registration. A clear illustration of this is demonstrated when one looks to see that the number of registered voters in Monroe County exceeds the number of eligible voters by nearly 20,000.

Participation as a percentage of eligible voters may be skewed high. The number of eligible voters is determined from Census figures which do not count people living in dormitories and other types of student housing. In either case, voter participation in the 30-40% range does not mark Bloomington as being particularly active as compared to the rest of the state or nation.

Indicator 15: Availability of Affordable Housing

Shelter is one of our basic needs. People will often do whatever is necessary to maintain a roof over their head and a safe place for their loved ones and possessions. For many low-income families the amount of their resources put towards housing can come at the expense of other basic needs such as good nutrition, healthcare, and educational expenses for children. To be affordable it is generally considered that housing should cost no more than 30% of income. Affordable housing is a key indicator of the social equity component of sustainability. A lack of affordable housing may strain community services that attempt to address other problems that result from scarce resources.

Misguided perceptions about affordable housing and increased crime and decreased property values can create opposition to its provision.[16] But where affordable housing is done well by the creation of mixed income and mixed use developments, it can avoid perceived problems and increase sustainability in other ways by limiting sprawl out to less expensive land, lowering transportation demand and infrastructure costs.

Table 7.

Percentage of people that can afford to rent/purchase median-priced housing (Monroe County, 2005)

	Value	Annualized	Annual Income Needed to keep Median Housing Cost below 30% of Income	% of households that can afford	% of families that can afford
Median Gross Rent	$630	$7,560	$25,200	60.0%	83.4%
Median selected monthly owner costs; Total	$832	$9,984	$33,280	51.0%	71.8%
Median selected monthly owner costs; units with a mortgage	$1,081	$12,972	$43,240	40.3%	60.7%

Table 7 displays the percentage of households and families in Monroe County whose income would allow them to spend no more than 30% on housing. Here families are distinguished from households in that the families are people living together that are related by birth, marriage, or adoption, as opposed to people who are roommates.

Table 8 compares the number of individuals living below the poverty line to the number of publicly assisted housing units in Monroe County. These data clearly show a lack of adequate affordable housing in Bloomington and Monroe County. However, it is difficult to say where we stand in relation to other communities, as this problem is faced throughout the country. Given our student-influenced demographics, it is hard to examine this problem in detail to know the effects on the students versus the resident population. For now, we have a benchmark and we can begin to measure our progress from here.

Table 8.

The Ratio of low-income housing to the number of people living below the poverty line (Monroe County, 2005)	
	Value
Individuals Below the Poverty Line, Monroe County, 2005	25,160
Number of Publicly Assisted Units, Monroe County	2,383
Number of Individuals below the Poverty Line per Low Income Housing Unit	**10.6**

Indicator 16: Hours of Work Needed to Support Basic Needs

In a sustainable city, families and individuals have the means to support themselves. Without those means, people need to rely on assistance from the government, charities, or social service agencies.

The Indiana Self-Sufficiency Standard was developed to determine the wage needed to support families at a basic level. The Standard was produced by the Indiana Coalition on Housing and Homelessness with help from the University of Washington and Wider Opportunities for Women. Included in The Standard are costs for housing, child care, transportation, health care, food, taxes and miscellaneous expenses. Also Earned Income and Child Care tax credits are included for those situations that qualify. The costs included provide for a "no frills" lifestyle with no entertainment expenses or ability to pay off debt. Table 9 displays the monthly and annual expenses for self-sufficiency in Monroe County for different types of families. Table 10 displays the number of hours that must be worked at the median income to meet those expenses.

Table 9.

Indiana Self Sufficiency Standard (2005)		
Family Description	**Monthly Expenses**	**Annual Expenses**
One Adult	$1,359	$16,308
One Adult; One Child (age 3-5)	$2,192	$26,304
Two Adults; One Child (age 3-5)	$2,762	$33,144
Two Adults; Two Children (ages 0-2 & 3-5)	$3,384	$40,608
Two Adults; Two Children (ages 6-12 & 13-18)	$2,700	$32,400

Simply "getting by" is not sustainable over the long term. Any number of events such as an illness or job loss could put a person or family back into poverty. For most family situations, the median income would provide for basic needs within a normal work week of 40 hours. As the median income was used in this case, there are certainly many in the community who earn below that amount and would not be able to meet their basic needs

Table 10.

			Estimated Number of Hours of Work per Week Needed to Support Basic Needs by Family Type				
	Annual Income	Hourly Income	One Adult	One Adult + One Child (age 3-5)	Two Adults + One Child (age 3-5)	Two Adults + Two Children (ages 0-2 & 3-5)	Two Adults + Two Children (ages 6-12 & 13-18)
Median Household Income, 2005	$34,308.00	$16.49	19.2	30.9	38.9	47.7	38.1
Median Family Income, 2005	$52,491.00	$25.24	12.5	20.2	25.5	31.2	24.9
Median earnings of population 16 years and over who work, 2005	$22,290.00	$10.72	29.5	47.6	59.9	73.4	58.6
Median earnings of civilian population 16 years and over who work full-time, year-round, 2005	$35,902.00	$17.26	18.3	29.5	37.2	45.6	36.4
Total earnings of an individual working full time at minimum wage	$10,712.00	$5.15	61.4	99.0	124.7	152.8	121.9

Indicator 17: Public Library Patronage

During his remarks on International Literacy Day on September 5, 2005 then UN Secretary-General Kofi Annan stated that "Experience and research show that literacy can be a major tool for eradicating poverty, enlarging employment opportunities, advancing gender equality, improving family health, protecting the environment and promoting democratic participation."

Maintaining a literate population helps to keep Bloomington strong in the areas of economic development, social equity, and environmental stewardship. Access for all citizens to the information they need to empower themselves is a crucial component to ensure that the benefits of literacy are distributed evenly across the community.

The Monroe County Public Library is a fantastic resource that provides many services to the community that all help to make the Bloomington area more sustainable. Between 2003 and 2004, circulations increased by 9% and then again by 7% in 2005 to over 2.2 million items checked out. The number of cardholders also increased in recent years to over 78,000 or 65% of the population.[17, 18, 19] In 2006 it was estimated that the library provided nearly $34 million worth of services to the public.[20]

The Monroe County Public Library also does an excellent job at ensuring that everyone has access to its materials. Homebound services and the Bookmobile bring library materials to those who cannot get to the library on their own and volunteer readers are available to assist the visually impaired.

Many more programs and services are available. To find out more, visit their website at www.monroe.lib.in.us.

Concluding Remarks

You may now be asking yourself, "how sustainable is Bloomington, and how long will it take to get there?" The truth is that sustainability isn't an end-point, but rather a process. No matter how well we do with these and other indicators, there will always be room for improvement. To use the word literally, to sustain would be to remain static, to have a community that does not have to use resources to battle sickness, crime caused by inequity, pollution, and other forces that detract from our way of life. What we seek is a future where our community constantly reinforces those resources that allow us to flourish; where sickness is not only universally treated, but replaced with wellness; where there is not only zero waste, but where our wastes are safe to be returned to the system, to nourish the food and products we will use the next day.

The ideal future is certainly far away, and it will take many improvements to begin to realize that future. Likewise the ideal report on sustainability will be something that we will be working towards. There are many things that we wished to measure, but were unable to at this time. We wished to know the amount of money that local businesses invest locally, how many volunteer hours and philanthropic gifts are donated in Bloomington, the percent of restaurants using local produce, the amount of land under a conservation easement, the number of employers that offer child care services, and there are many others. We hope that we will find ways to measure these things and more community partners to help us do so.

We hope that this report and the dialogue we are creating around these issues will increase the likelihood of those indicators moving in the right direction. Again we thank you for your interest in making Bloomington more sustainable and together we can make that a reality.

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